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## ON THE APPLICATION OF THE NAME *ARNICA* *LESSINGII* (TORREY & GRAY) GREENE

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THERE has come to my attention only recently a paper<sup>1</sup> on Canadian plants by Dr. Boivin in which he discusses *Arnica Lessingii* (Torr. & Gray) Greene. Unfortunately, Dr. Boivin has been led into an error of interpretation, no doubt as a result of one of citation made by me in my monograph of the genus.<sup>2</sup> Not only has Dr. Boivin misapplied the name *Arnica Lessingii* (Torr. & Gray) Greene, displacing this binomial by the otherwise properly applied *Arnica louiseana* Farr ssp. *frigida* (Meyer ex Iljin) Maguire (l. c. p. 209), but he has unwittingly proposed a new name *Arnica Porsildiorum* Boivin (l. c. p. 210) for the valid and correctly assigned *Arnica Lessingii*; thereby he adds one more hyponym to the distressingly long list in the genus *Arnica*, and further compounds the original error.

First of all (as all contemporary students of the genus have recognized), two distinct species are involved, both of trans-Bering distribution. *Arnica louiseana*, in Alaska the ssp. *frigida*, is a beautiful plant with large usually solitary and usually gracefully nodding heads, dense yellowish pilose subinvolucral pubescence, and yellow anthers. It belongs to the subgen. *Arctica* and is most closely related to *A. alpina* (L.) Olin. The second, *Arnica Lessingii*, also an attractive plant, is much less conspicuously pubescent, and has smaller sharply and stiffly

<sup>1</sup> Boivin, Bernard, *Centurie de Plantes Canadiennes*. Nat. Canad. 75: 202-227. 1948.

<sup>2</sup> Maguire, Bassett. A Monograph of the Genus *Arnica*. Brittonia 4: 386-510. 1943.



nutant heads, and *purple-black* anthers. This species belongs to the subgen. *Andropurpurea*, and is probably most closely related to *A. unalaschcensis* Less.

I agree entirely with Boivin that Greene clearly intended to make the transfer, or more accurately to elevate the status of Torrey and Gray's  $\beta$  *Lessingii* to specific rank; that he did so validly; and that it was not his intent to propose a new species (although most specimens annotated in Greene's hand as *A. Lessingii* are actually *A. louiseana frigida*, which at that time had no valid name).

The simple answer to the confusion so needlessly set off by me lies in the typification of the basonym *Lessingii*. The type is at the New York Botanical Garden. It consists of the single well-preserved specimen with a sharply and stiffly nutant head and *purple-black* anthers. The label bearing the printed designation "Torr. & Gray, Flora N. Amer." is annotated in Torrey's hand, "*A. angustifolia*  $\beta$  *Lessingii*". Thus, the type of *A. angustifolia*  $\beta$  *Lessingii* Torr. & Gray is definitely fixed and, it follows likewise, the type of *A. Lessingii* (Torr. & Gray) Greene. So, then also the application of the binomial *Arnica Lessingii* is definitely affixed to the clear-cut trans-Bering species with naked rhizomes, sharply nodding heads, and *purple* anthers.

Torrey and Gray (l. c. 1843) had misinterpreted *A. alpina* Lessing (which is *A. louiseana frigida*) and erroneously associated their  $\beta$  *Lessingii* with it, but at the same time had properly characterized their variety as having "anthers blackish," as indeed they are! Gray (l. c. 1884), probably lacking the type, which is at the New York Botanical Garden, not only erroneously transferred var. *Lessingii* to *A. alpina* var. *Lessingii*, but likewise characterized the anthers incorrectly as "not blackish." Obviously, he was not dealing with the population with black anthers. Greene (l. c. 1900) validly effected the nomenclatural transfer, whether or not under misinterpretation of specimens. Iljin (l. c. 1926) interpreted *A. Lessingii* (Torr. & Gray) Greene correctly, as did Rydberg (l. c. 1927), Hultén (l. c. 1937) and Maguire (l. c. 1943). However, Rydberg to some extent confused the synonymy by assigning *A. alpina* var. *Lessingii* Gray "in part" to *A. Lessingii* (Torr. & Gray) Greene, and "mainly" to *A. Sancti-Laurentii* Rydb. (= *A. louiseana* ssp. *frigida*).



Maguire further confused the synonymy by erroneously assigning *Arnica angustifolia*  $\beta$  *Lessingii* Torr. & Gray to *Arnica louiseana* ssp. *frigida*, while at the same time correctly assigning *Arnica alpina* var. *Lessingii* Gray to that entity. My bracketing together the citation of these two distinct entities in the synonymy of *Arnica louiseana* ssp. *frigida*, is a *lapsus* that I cannot explain.

Boivin (l. c. 1948) misinterpreted *Arnica Lessingii* (as a result, no doubt, of my error of citation), applying the name to plants that properly come under the trinomial *Arnica louiseana* ssp. *frigida*; and proposed the hyponym *Arnica Porsildiorum* Boivin for properly applied *Arnica Lessingii* (Torr. & Gray) Greene.

The correct names, proper authorities, and pertinent synonymy for the two species discussed are as follows:

ARNICA LOUISEANA Farr subsp. *frigida* (Meyer ex Iljin) Maguire, *Madroño* 6: 153. 1942. *A. alpina* Less. *Linnaea* 6: 233. 1831; Herder, *Bull. Soc. Nat. Mosc.* 40: 423. 1867. Not (L.) Olin, *Diss.* 11. 1799. *A. alpina* var. *Lessingii* Gray, *Syn. Fl. N. Am.* 1<sup>2</sup>: 383. 1884, not *A. angustifolia*  $\beta$  *Lessingii* Torr. & Gray, *Fl. N. Am.* 2: 449. 1843. *A. nutans* Rydb. *N. Am. Fl.* 34: 328, 1927. *A. Sancti-Laurentii* Rydb. *N. Am. Fl.* 34: 328. 1927. *A. brevifolia* Rydb. *N. Am. Fl.* 34: 329. 1927. *A. Mendenhallii* Rydb. *N. Am. Fl.* 34: 329. 1927. *A. Illiamnae* Rydb. *N. Am. Fl.* 34: 331. 1927. *A. Lessingii* Boivin, *Nat. Canad.* 75: 209. 1948, not *A. Lessingii* (Torr. & Gray) Greene, *Pittonia* 4: 167. 1900.

TYPE: *J. F. G. Eschscholtz*, St. Lawrence Bay (and Eschscholtz Bay), 1815–18, *Herb. Meyer. Leningrad.* Type of *A. frigida* Meyer ex Iljin.

ARNICA LESSINGII (Torr. & Gray) Greene, *Pittonia* 4: 167. 1900. *A. montana*  $\beta$  *angustifolia* Hook. *Fl. Bor.-Am.* 1: 330, in part, 1833. *A. angustifolia*  $\beta$  *Lessingii* Torr. & Gray, *Fl. N. Am.* 2: 449. 1843, not *A. alpina* var. *Lessingii* Gray, *Syn. Fl. N. Am.* 1<sup>2</sup>: 383. 1884. *A. obtusifolia* Torr. & Gray, *Fl. N. Am.* 2: 451. 1843, not *A. obtusifolia* Less. *Linnaea* 6: 236. 1831. *A. obtusifolia* var. *acuta* Raup, *Contr. Arnold Arb.* 6: 213. 1934. *A. Porsildiorum* Boivin, *Nat. Canad.* 75: 210. 1948.

TYPE: *Captain Mulgrave*, Kotzebue's Sound, *sine no.* New York Botanical Garden. Not at the Greene Herbarium as suggested by Maguire (l. c. p. 488).<sup>3</sup>

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<sup>3</sup> A CORRECTION IN TERMINOLOGY—It is desirable at the same time to call attention to an additional error, one in terminology, made by me in my monograph of the genus *Arnica* (MAGUIRE, BASSETT. *Brittonia* 4: 386–510. 1943). On page 400 I offered the following definition: "The periclinium begins at the point of insensible transition of peduncle into capitulum and terminates at the base of the involucre bracts." This usage was incorrectly attributed to Cavillier in his study of the genus *Doronicum* (CAVILLIER, *F. Ann. Cons. Jard. Genève* 14: 215 and pl. 4. 1910). Cavillier properly used the term in its traditional and etymologically correct sense to indicate the involucre.

The term *hypocephalum* does accurately designate this region of such taxonomic importance in *Arnica* and other *Compositae*. It should so be read in all instances where I have used the term *periclinium*.—B. M.